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Rangeland/Livestock Management Effects Report

Medicine Bow Landscape Vegetation Analysis (LaVA) Project

Medicine Bow National Forest

Albany and Carbon Counties, Wyoming

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SUMMARY

This report discusses the effects of a proposed landscape scale vegetation management project upon livestock management and rangeland health on the Snowy Range and Sierra Madre mountain ranges within the Brush Creek/Hayden (BCH) and Laramie Ranger Districts of the Medicine Bow National Forest. It also discusses the effects of the No Action alternative. This proposed project would authorize vegetation management activities for the next 10-15 years and could authorize up to 95,000 acres of stand initiating or even-aged forest treatment methods, up to 165,000 acres of uneven-aged or intermediate forest treatments and up to 100,000 acres of other vegetation treatments such as prescribed fire, mastication and hand-thinning in forested and non-forested areas. This project has potential to affect 45 active grazing allotments and 35 livestock grazing permittees.

FOREST PLAN DIRECTION

Revised Land and Resource Management Plan for the Medicine Bow National Forest (USDA Forest Service 2003)

Continue to satisfy the demand for livestock products through grazing management that is economic, environmentally sound, and compatible with other resources.

Maintain current levels of grazing opportunities on suitable rangelands to achieve desired conditions.

Rangeland vegetation will include a mix of seral stages across the landscape. Approximately 10-20% of the vegetation will be in early seral, 60-80% will be in mid seral, and 10-20% in late seral stages. Noxious weed populations are being identified and mapped with the primary emphasis in preventing new noxious weed infestations while aggressively pursuing control and eradication of existing populations.

In fire and harvest created openings, manage livestock grazing to assure management does not prevent successful regeneration of shrubs and trees.

In aspen stands, manage livestock grazing to ensure impacts do not prevent or inhibit sprout survival sufficient to perpetuate the long-term viability of the clones.

For all proposed projects or activities, determine the risk of noxious weed introduction or spread and implement appropriate mitigation measures.

ENVIRONMENTAL CONSEQUENCES

Alternative 1 - No Action

The No Action Alternative assumes that the Modified Proposed Action would not be implemented within the analysis area. This alternative represents no attempt to actively respond to the issues, the purpose and need for action, or concerns identified during public scoping and public engagement sessions for this

project. There would be no effort to modify existing conditions, unless authorized by other decisions. Current management plans would guide management of the project area and ongoing management programs would be implemented. These other projects would proceed under separate NEPA analyses or authorities.

Direct Effects – No Action

Term permitted grazing use would continue as authorized. There would be no change in carrying capacity from the No Action or the Modified Proposed Action implementation. Range structures would be maintained and improved as necessary to continue livestock management at its current scope and intensity.

There will continue to be a high rate of damage to fences in coniferous forest areas as the large number of trees killed by the mountain pine beetle epidemic and other insect and disease agents continue to fall. Some spring developments for livestock water that are located in coniferous forest with high tree mortality may also be damaged by falling trees.

Coniferous forest that experienced high tree mortality from the mountain pine beetle epidemic and other insect and disease agents in recent years will continue to provide some forage for livestock now that more sunlight penetrates these stands; but in many areas livestock access to this forage will decrease or has already decreased as trees continue to fall. Before the mountain pine beetle epidemic most of these forest stands provided little or no forage for livestock because the herbaceous understory was sparse or was dominated by plants such as grouse whortleberry, pinegrass or elk sedge which have low palatability and forage value for livestock.

Many aspen stands within the project area are old and are changing to conifer stands through natural succession and lack of disturbance. Aspen stands generally produce more forage for livestock than coniferous stands due to the composition of the herbaceous understory. With little or no mechanical treatment or prescribed fire in aspen stands, natural succession will continue to gradually reduce forage resources for livestock in most aspen forests because they convert to a coniferous stand with sparse or undesirable herbaceous understory. Wildfire would be the primary mechanism by which young aspen stands would be established under the no action alternative. .

Aging shrub/grass stands that are, or are becoming, dense and decadent (greater than 50% of the shrub canopy dead) will continue to provide less forage for livestock than they did at earlier seral stages. Forage production may decrease further over time on some sites in the absence of natural events which thin or remove the old shrub canopy. Conversion of old shrub stands to earlier seral stages can result naturally from insect and disease outbreaks, extreme weather events, prolonged heavy browsing or wildfire. Shrub stands that experience significant die-off from insect or disease are likely to exhibit an increase in herbaceous understory and new shrub recruitment, but it will be a relatively slow process since skeletons of dead mature shrubs will persist for a long time, shading the ground and retarding regeneration and grass/forb growth. Though wildfires in shrublands will usually create early successional shrub stands in the long run, they are unpredictable in timing and extent and could burn a larger percentage of a shrub stand than is desirable. Wildfires may also burn so hot that organic matter is consumed and erosion follows. In this event, re-establishment of young shrubs and a productive herbaceous plant community that provides good quality and quantity of livestock forage could take years. Past herbicide and prescribed fire treatments implemented from the late 1950's to the present in big sagebrush and mixed mountain shrub communities on BCH and Laramie districts have created some early seral and mid seral shrub stands.

Indirect Effects – No Action

Maintenance of range improvements (fences and watering facilities) and livestock management (moving and gathering livestock) will continue to present increased level of difficulty and danger for permittees

relative to what was historically the case. This is due to the unprecedented scope and scale of tree die-off created by the mountain pine beetle epidemic. These dangerous conditions are likely to persist for decades until a majority of dead trees have fallen or been removed by wildfire. Even after wildfire, the danger of falling trees remains, since most fires leave standing dead trees.

Livestock management will continue as prescribed in Allotment Management Plans in most areas. However, in some areas livestock distribution may be affected if the livestock cannot access sizable primary grazing areas due to heavy downfall timber. This could result in higher utilization levels on those areas that remain easily accessible and eventually could require adjustments to the grazing season, grazing rotation or livestock numbers until access to primary grazing areas is restored through wildfire or cutting of stock trails through downfall timber.

In many areas where coniferous timber stands form natural barriers between pastures or allotments and the tree mortality is high, there will be an increase in understory forage for livestock. Where there has not yet been much tree-fall, livestock may be attracted into these areas and travel between pastures or allotments, undermining the grazing management systems. In places this could be enough of a problem to require more on-ground monitoring and management of livestock distribution by the permittee. Eventually, however, as dead trees fall, these forest stands will once again act as effective natural barriers between discrete grazing areas.

Large tracts of coniferous forest with high tree mortality present an increased risk of large scale wildfire. This raises the risk of loss of livestock to fire. On many allotments on BCH and Laramie districts the large acreage, ruggedness of the terrain and high percentage of forested ground make it impossible to quickly locate and remove livestock ahead of an advancing fire.

Cumulative Effects – No Action

The effects upon livestock management described above created by the large scale tree mortality in recent years is cumulative to the other global, local and national factors that make livestock production challenging in Wyoming. Those same factors are also cumulative to effects from the modified proposed action (described below) and will not be repeated here (see cumulative effects of the modified proposed action upon livestock producers, below).

The elevated hazard and difficulty of maintaining range improvements and managing cattle in the current landscape of dead and falling trees combined with the high risk of a large scale wildfire the No Action alternative is potentially more detrimental to livestock management and livestock producers than the modified proposed action.

Alternative 2 – Modified Proposed Action

The Forest Service proposes to conduct vegetation management activities on NFS lands, including inventoried roadless areas, within the Sierra Madre and Snowy Range Mountain Ranges of the MBNF. Vegetation management activities, including prescribed fire, mechanical, and hand treatment methods, could be applied on up to 360,000 acres to make areas more resilient to future disturbance; protect, restore, and enhance forest ecosystem components; supply forest products to local industries; provide for human safety; reduce wildfire risk to communities, infrastructure, and municipal water supplies; and improve, protect, and restore wildlife habitat. Specific treatments would be developed and authorized for implementation over a 10-year period beginning in 2019 and would be completed within approximately 15 years of the project decision. A combination of commercial timber sales, service contracts, stewardship contracts, cooperative authorities, partner capacity, and Forest Service crews would be used to implement the project.

The Modified Proposed Action is intended to address continually changing forest conditions by incorporating principles of adaptive management. In doing so, this alternative proposes an acreage ceiling of up to 360,000 acres that could be treated within pre-established Treatment Opportunity Areas

(613,000 acres) rather than identifying site-specific treatment units. During project implementation, the Forest Service would cooperate with other agencies, local governments, interested stakeholders, and organizations to identify specific treatment units. Specific objectives of each treatment unit would be determined prior to any ground-disturbing activities using existing vegetation conditions and a series of project-developed field review forms. The sum of all treatments, regardless of roadless status, would not exceed 360,000 acres and would be dependent on such things as staffing, funding, site-specific resource conditions, and project design features.

Specific activities associated with the Modified Proposed Action include:

- Up to 95,000 acres of stand initiating or even-aged treatment methods.
- Up to 165,000 acres of uneven-aged or intermediate treatments.
- Up to 100,000 acres of other vegetation treatments, including prescribed fire, mastication, and hand thinning.
- Constructing not more than 600 miles of temporary road, as necessary, to access treatment areas.

Adaptive Management Treatment Options

A variety of management options including, but not limited to, clearcutting/coppice; group and individual tree selection; salvage; mastication; sanitation; thinning; and prescribed fire would be used to achieve resource objectives identified for individual treatments.

Inventoried Roadless Areas

Roughly 125,200 acres of Inventoried Roadless Areas (IRAs) have been identified as potential Treatment Opportunity Areas (TOAs). No temporary road construction would occur in IRAs.

Road/Access Information

The Modified Proposed Action includes constructing no more than 600 miles of temporary road, as necessary, to access treatment areas. Temporary roads would be for administrative use only (i.e., they would be managed as closed to the public) and would be reclaimed within 3 years of project completion preclude future motorized use and to restore ecological function in the affected area. Methods for reclaiming temporary roads may include, but are not limited to, re-contouring the road, ripping/scarifying the roadbed, removing culverts, installing drainage features, creating physical barriers to preclude motorized travel, scattering wood/rock debris onto the road, applying seed and mulch to the area, and posting signs.
The alternative also includes utilizing and/or reconstructing existing open and closed NFS roads to access treatment units. Reconstruction may include road blading, culvert installation or replacement, and gravelling. Closed NFS roads would be for administrative access only and would be returned to a closed status with the method of closure being determined at implementation.

Other Activities

Other activities associated with the Modified Proposed Action include, but are not limited to slash treatments (e.g., pile burning, chipping), regeneration surveys, noxious weed control, native grass/forb seeding, and road maintenance associated with implementing vegetation treatments.

Project Design Features and Analysis Assumptions

Project Design Features (PDFs) and Analysis Assumptions have already been developed for the LaVA Project to reduce or prevent potential undesirable effects resulting from management activities and to ensure consistent analysis of project effects, respectively. Project Design Features were developed using guidance from such documents as the State of Wyoming Best Management Practices, Watershed Conservation Practices, Revised Land and Resource Management Plan for the Medicine Bow National Forest (Forest Plan) standards and guidelines, and other environmental protections required by

applicable laws, regulations, and policies. The PDFs and Analysis Assumptions specific to the LaVA project are included in the project files.

The following modifications have been made to the Proposed Action to address concerns raised during the July 2017 scoping effort:

- Eliminating the 10 miles of permanent road construction proposed in the July 2017 Scoping Document
- Developing a new TOA map to better reflect where temporary road construction is and is not allowed, per Forest Plan direction.

Direct Effects – Modified Proposed Action

Noise and activity associated with timber harvest may temporarily cause livestock to avoid those areas, changing their distribution patterns within pastures or allotments. This may require more management of the livestock to maintain satisfactory distribution and to prevent overuse of areas more remote from the logging activity. This is a relatively short-lived effect and will vary by concentration of vegetation management activities, the locations of primary grazing areas relative to treatment areas, and the nature of the livestock.

Increased log truck and worker traffic may temporarily make it more difficult for permittees to use some roads for trailing livestock and will increase livestock collision hazard to some degree during timber harvest and log hauling.

Gathering and moving livestock within allotments will become easier in clearcut and overstory removal areas after harvest has been completed providing the amount of slash is not too deep to inhibit travel by livestock or livestock managers on horseback.

Removal of dead trees through harvest or prescribed fire will prolong the life of some fences and maintain or restore access to some watering facilities. It will also reduce maintenance time and expense for permittees. Range infrastructure within harvest units will be identified in timber sale contracts as sites to be protected from damage, and would therefore be repaired by the timber operator if damage did occur during the harvest process. Prescribed fire would also be implemented so as to protect fences and spring developments.

There are currently several miles of timber stands which serve as natural barrier for either allotment or pasture boundaries. Harvest in timber stands which presently serve as natural barriers may create breaches in those barriers. This may cause the need for more intensive livestock management in order to meet allowable use guidelines or other goals and objectives. This may include additional range improvements such as fencing. Any new range improvements will be constructed according to the terms of the grazing permit and would be subject to analysis required by the National Environmental Policy Act.

Depending on the location, site characteristics and herbaceous plant response to prescribed burning, burned areas may need to be deferred from livestock use or rested in order to allow for recovery of desirable native plant species and ground cover. Rest or deferment may not be needed for sites normally used infrequently by livestock due to their location on the landscape relative to principal grazing areas. Any deferment or rest will require close communication and coordination with the permittee. This project includes a design criteria that requires treatment opportunities be coordinated with Forest Service Rangeland Management Specialists to provide adequate time to plan changes in grazing management and to limit impacts to grazing permittees and permittee operations.

Big sagebrush and mixed mountain shrublands provide a majority of the forage on many BCH and Laramie district allotments. Treatment of these shrublands with prescribed fire or using mechanical/hand tool methods may create more early seral shrublands which generally produce more livestock forage than mature or decadent shrublands. Treatment of these areas with prescribed fire may temporarily reduce

the likelihood of large shrubland wildfires by removing or thinning shrub canopy cover and thereby creating lighter, less continuous fuels. Because prescribed fire is timed to reduce fire severity (usually implemented in spring or fall when soils are moist and many native plants are dormant), many native plant species survive and quickly re-sprout from the root crown, leading to rapid recovery within only one or two growing seasons for herbaceous species, given proper management and a favorable moisture regime. By contrast, a wildfire in shrublands may burn hot enough to kill many native plants and the rangeland recovery period may be much longer, perhaps a decade or more. The design criteria for this project include a requirement to apply prescribed fire when soil conditions provide for minimal soil burn severity. Mechanical thinning or removal of shrubs, if it were to be employed, might create more soil disturbance and slower recovery of forage plants than prescribed fire, depending upon the specific mechanical method used and the site characteristics.

Treatment of aspen stands either mechanically or with fire will set aspen stands back to an earlier successional stage. At early and mid-seral stages most aspen stands have potential to produce herbaceous forage that is desirable for livestock. For the majority of aspen stands on the districts, the successional path for aspen is to eventually convert to a coniferous stand as young shade-tolerant conifers dominate the understory, then grow to dominate the canopy as well. Many aspen stands within the project area, especially on the west side of the Sierra Madre Range, already have a heavy conifer component and therefore produce little or no livestock forage, so the proposed aspen treatments could increase forage and improve livestock distribution on some grazing allotments. In some locations aspen suckers may be preferentially consumed by sheep. If such use is found to occur at levels that jeopardize successful establishment of a fully stocked aspen stand, some management adjustments may have to be made until aspen terminal buds grow beyond the reach of domestic sheep.

Indirect Effects – Modified Proposed Action

Timber harvest will produce transitory livestock forage (forage that will be available for a limited period of time) that could last 15 years or more, depending upon the site characteristics. The amount, availability and palatability of forage on transitory rangelands will vary by site and be influenced by proximity of water, the amount of residual slash, and herbaceous plant species composition. An increase in transitory range could promote better livestock distribution while available and allow for lighter use levels on traditional primary grazing areas which in turn could improve vigor of favored forage plants in those primary grazing areas. In some instances where large areas of transitory range are created by timber harvest within allotments, temporary permits for its use may be granted to the permittees, where appropriate.

Cattle browsing on young coniferous trees in harvest units is infrequent on the BCH and Laramie districts. Cattle generally do not browse young trees until they have already exceeded maximum use levels on herbaceous forage; so proper livestock management as prescribed in allotment management plans and the Forest Plan would allow use of transitory forage without damaging tree regeneration in most instances. Domestic sheep are more inclined to browse on young trees at various times through the grazing season depending on what alternative forage is available and management by the herder. Transitory range in timber harvest units within sheep allotments may be less available than in cattle allotments if browsing of seedling coniferous trees is found to occur at a level that would hinder successful reforestation.

Trampling of regenerating trees in harvested timber stands is also a consideration for both sheep and cattle, and will influence how much the use of transitory range is to be encouraged on a case by case basis.

Large scale removal of standing dead timber will greatly reduce the risk of injury to livestock managers while maintaining structural improvements and managing cattle on their allotments. It is also likely to reduce the risk of very large, hot forest wildfires that would have negative consequences for rangeland health through soil loss, perennial plant mortality and damage to infrastructure. Young regenerating forests act as fuel breaks in some wildfire scenarios, increasing chances for containment of a fire before it grows very large. Hot wildfires can create the need for multiple years of deferment or rest from livestock

grazing in order to promote recovery of the vegetation. In contrast, timber harvest/salvage units seldom require rest from livestock grazing.

Treatment of relatively large areas of coniferous forest around private land inholdings to protect Wildland/Urban Interface areas may encourage more livestock grazing near those private land parcels due to the transitory range that will be created and perhaps also easier access. This could lead to greater permittee/landowner conflicts, particularly when there are residences on those private parcels. Private landowners are responsible for fencing livestock out of their property in Wyoming and on the National Forest, but for a variety of reasons, some people choose not to build a livestock-proof fence. If private landowners who object to livestock on their property choose not to build fence, then they may resort to livestock harassment, which could have a negative effect upon livestock behavior and distribution within the allotment. Permittees might need to increase the amount of riding they do on the allotment to prevent or ameliorate conflicts with private landowners or negative effects to their stock.

Cumulative Effects – Modified Proposed Action

Effects of past timber sales and prescribed burns in and around the project area are cumulative to the effects of the modified proposed action. Currently, quite a few timber sales are in the late planning or implementation stage on the west and north portions of the Sierra Madre, in the Ryan Park area of the west Snowy Range, along with the southeast portion of the Snowy Range. These effects include changes to natural barriers, temporary disruption of livestock management, and creation of transitory range.

Past effects of treatments of shrublands through prescribed fire or herbicide application are cumulative to effects from prescribed fire treatments proposed in this project. BCH and Laramie districts conducted some relatively large scale aerial spraying of 2,4-D herbicide to kill big sagebrush 50-60 years ago and have implemented quite a few prescribed burns on shrublands along the Forest Boundary since that time. Some shrubland areas treated in the past have not yet returned to pre-treatment big sagebrush canopy cover and some areas are still dominated by other native shrub species that re-sprout after fire. Monitoring of shrubland sites on BCH District has shown that recovery time for shrubs varies greatly among sites and is influenced by the frequency of treatments, the mix of shrub species present before the treatment, grazing/browsing history, and the physical properties of the site.

The Forest Plan describes desired condition for rangelands as having 10-20% in early seral stage, 60-80% in mid seral stage, and 10-20% in late seral stage. The Forest Plan does not give guidance as to what age or canopy cover ranges are normally considered to define early, mid and late seral stages for shrublands. The Wyoming Interagency Vegetation Committee suggested that early seral Mountain Big Sagebrush (which makes up the majority of sagebrush communities on the Brush Creek/Hayden and Laramie districts) is early seral at 0-5% shrub canopy cover, mid seral at 5-20% canopy cover and late seral at greater than 20% canopy cover (Wyoming Interagency Vegetation Committee 2002). The Forest Plan directs us to analyze project level contributions to desired conditions at the geographic area scale, but the Medicine Bow-Routt NF does not have a complete inventory of the major shrubland species by seral stages. Therefore, when site specific shrubland areas are proposed for treatment during the implementation phase, fuels, wildlife, and rangeland management specialists will need to confer to examine present seral stages of shrublands from past natural mortality events, herbicide treatments, prescribed fire and wildfire in order to determine if/how proposed prescribed burn units would meet the desired seral stage distribution for shrublands in affected geographic areas. In some instances, fuels objectives may take precedence over shrubland management goals that benefit livestock and wildlife. Shrubland seral stage proportions will continue to change across the Sierra Madre and Snowy Range over the expected 15-year life of this project from a combination of implementation of shrubland management projects already approved but not yet implemented, wildfire, natural succession, and the effects of insects, disease, drought and other natural events. For this reason it is more appropriate to inventory seral shrub stages in geographic areas where site-specific treatments are proposed closer in time to actual implementation of the treatments.

From a livestock production and management standpoint, all the potential effects of the modified proposed action (as well as effects of no action) are cumulative to the many factors influencing sustainability of Wyoming's livestock industry. Some of those factors include:

- Livestock disease concerns (brucellosis, mad cow disease) that affect market prices
- Increasing prices for purchase or lease of agricultural land due to high recreational/residential values (despite the limited profitability of agriculture)
- Sharply fluctuating fuel, feed and fertilizer prices related to world oil markets and biofuel production
- High cost and limited availability of labor
- Competition from foreign markets where labor is cheaper and environmental regulations are lax.
- Cost of meeting increasing environmental regulations on private lands
- The aging of Wyoming agricultural operators and the effects of estate taxes
- Potential for more frequent and more severe droughts from climate change.

Grazing permittees on National Forest lands must deal with the effects of multiple uses such as those described for this project and those from other concurrent projects and activities. Recreation, in particular, has increased steadily over time, with the motorized community increasing the most within the project area, particularly over the last 20 years. In 2006, Wyoming was reported to have the second highest OHV use rate, after Alaska, with an estimated 33.8 percent of those over 16 years of age participating (Foulke et al. 2006). OHV use that is occurring across BCH and Laramie districts affects livestock distribution and the integrity of gates and fences. Increased management effort is required of many permittees by the Forest Service to better integrate multiple uses while protecting resource values and this is reflected in the profitability of operations that include grazing allotments on National Forests. Wyoming producers who rely on federal grazing as a part of their livestock operations have been found to have a return to assets that is 23% lower than the average agricultural producer in Wyoming and 54% lower than the average agricultural producer in the nation (Moline et al. 1992).

Negative effects of the proposed treatments are primarily short-lived and offset by positive effects such as an increase in transitory range, improved and safer access, and reduction of damage to some fences and other range improvements from falling trees. For this reason, the project is not expected to add appreciably to the other factors that negatively impact livestock management and rangeland health for the affected producers or the allotments within the project area.

Comparing Magnitude of Effects by Accounting Unit

Accounting Units were delineated within the project area to facilitate effects analyses, decision making, and project implementation. For rangeland resources, however, a meaningful effects comparison cannot be made among these accounting units for several reasons:

- Many allotments cross accounting unit boundaries
- Some permittees have permits on multiple allotments that fall within or across various accounting units
- The positive effects of fenceline clearing will depend upon where timber harvest/salvage units are ultimately located within the TOAs
- The negative effects of loss of natural barriers between pastures and/or allotments will depend upon where timber harvest/salvage units (and also possibly some prescribed burns) are located within the TOAs
- Most of the proposed treatments have both negative and positive consequences for permittees which may cancel each other out in some instances. For example, timber harvest/salvage units are likely to have both the following positive and negative effects:
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Positive effects	Negative effects
Where harvest/salvage units include fences, those fences will no longer have accelerated damage from falling trees and will be easier and safer to maintain	Where harvest/salvage units eliminate or weaken natural barriers between allotments or pastures, more management time or fence construction may be needed to keep livestock in authorized areas and maintain pasture rotations
Many harvest/salvage units are likely to increase the amount of forage available for livestock for a 10-15 year period after harvest. This improves livestock distribution and could result in some temporary increases in authorized livestock numbers or season length if the forage increase is substantial.	
Harvested/salvaged areas are likely to make it easier for the permittee to locate and move cattle around in the allotment compared to working in timber stands with a lot of downfall trees. If slash in harvest units is heavy this benefit may not be realized.	During timber harvest/salvage implementation, it may be temporarily more difficult to manage livestock on an allotment. There may be more vehicle traffic on roads used by the permittee for trailing cattle and cattle may avoid some primary grazing areas near the noise and activity associated with harvest.

The table below provides some metrics regarding rangeland infrastructure and invasive species within the accounting units to illustrate differences among them.

Rangeland Management/Rangeland Health Existing Condition Metrics by Accounting Units			
Accounting Unit	**Range infrastructure**		**Invasive Annual Grasses**
	Approximate Miles of Fenceline within TOAs (includes fences against PVT and STE land)	**Approximate Miles of Natural Barriers between pastures and allotments within TOAs**	**Estimated acres of cheatgrass infestations (not a complete inventory)***
Battle Pass	2.1	3.1	4
Rock Morgan	7.8	10.6	0
Owen Sheep	0.6	0	800
North Corner	4.9	10.7	6
French Douglas	5.9	13.6	28
Fox Wood	15.0	10.0	265
Bow Kettle	8.1	13.9	0
West French	4.5	3.3	34
Cedar Brush	8.9	12.8	5
Pelton Platte	4.1	1.7	368
Big Blackhall	22.4	6.6	329
Green Hog	8.6	2.7	31
Jack Savery	16.5	22.3	2
Sandy Battle	44.4	1.2	474

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